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<151> 2003-07-31

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tgttggcatt gcag gga atg gag gct ttt cgg tcg gag gtg gag aag agg    11111
              Gly Met Glu Ala Phe Arg Ser Glu Val Glu Lys Arg
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atg ccg aac ggc gtg ctg gag cgc gct gcg ccg gac gac ctc atc gac   11159
Met Pro Asn Gly Val Leu Glu Arg Ala Ala Pro Asp Asp Leu Ile Asp
    365   370   375

aag aaa tgg cag agg agg gac tac ctc ggc gtg cac ccg cag aag cag   11207
Lys Lys Trp Gln Arg Arg Asp Tyr Leu Gly Val His Pro Gln Lys Gln
380   385   390   395

gaa ggg atg tcc tac gtc ggc ctg cac gtg ccc gtc ggc cgg gtg cag   11255
Glu Gly Met Ser Tyr Val Gly Leu His Val Pro Val Gly Arg Val Gln
              400   405   410

gcg gcg gac atg ttc gag ctc gcc cgc ctt gcc gac gag tat ggc tcc   11303
Ala Ala Asp Met Phe Glu Leu Ala Arg Leu Ala Asp Glu Tyr Gly Ser
              415   420   425

ggc gag ctc cgc ctc acc gtg gag cag aac atc gtg atc ccg aac gtc   11351
Gly Glu Leu Arg Leu Thr Val Glu Gln Asn Ile Val Ile Pro Asn Val
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aag aac gag aag gtg gag gcg ctg ctc gcc gag ccg ctg ctt cag aag   11399
Lys Asn Glu Lys Val Glu Ala Leu Leu Ala Glu Pro Leu Leu Gln Lys
              445   450   455

ttc tcc ccg cag ccg tcg ctg ctg ctc aag ggc ctg gtc gcg tgc acc   11447
Phe Ser Pro Gln Pro Ser Leu Leu Leu Lys Gly Leu Val Ala Cys Thr
460   465   470   475

ggc aac cag ttc tgc ggc cag gcc atc atc gag acg aag cag cgg gcg   11495
Gly Asn Gln Phe Cys Gly Gln Ala Ile Ile Glu Thr Lys Gln Arg Ala
            480   485   490

ctg ctg gtg acg tcg cag gtg gag aag ctc gtg tcg gtg ccc cgg gcg   11543
Leu Leu Val Thr Ser Gln Val Glu Lys Leu Val Ser Val Pro Arg Ala
            495   500   505

gtg cgg atg cac tgg acc ggc tgc ccc aac agc tgc ggc cag gtg cag   11591
Val Arg Met His Trp Thr Gly Cys Pro Asn Ser Cys Gly Gln Val Gln
            510   515   520

gtc gcc gac atc ggc ttc atg ggc tgc ctc acc aag gat agc gcc ggc   11639
Val Ala Asp Ile Gly Phe Met Gly Cys Leu Thr Lys Asp Ser Ala Gly
            525   530   535

aag atc gtc gag gcg gcc gac atc ttc gtc ggc ggc cgc gtc ggc agc   11687
Lys Ile Val Glu Ala Ala Asp Ile Phe Val Gly Gly Arg Val Gly Ser
540   545   550   555

gac tcg cac ctc gcc ggc gcg tac aag aag tcc gtg ccg tgc gac gag   11735
Asp Ser His Leu Ala Gly Ala Tyr Lys Lys Ser Val Pro Cys Asp Glu

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                560                    565                    570


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Leu Ala Pro Ile Val Ala Asp Ile Leu Val Glu Arg Phe Gly Ala Val
                575                    580                    585


cgg agg gag agg gag gag gac gag gag tag gagcacagac tggggtggtt        11833
Arg Arg Glu Arg Glu Glu Asp Glu Glu
             590                    595


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gaatcgggtg aaatttgggt gaccccgat acaaatcagt gttccgatag gtaataccct   300

gctctcagca tctgcccttt tgaattcgcc aagagccagc atctgccctt ttgaattcgc   360

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gcgcccctc cctcctccgc aataaacagc cacacgcgcc gccccatgt ccaccctcat   480

cgccacagcg caccaccacc accaccacca ccaccaccac cgtctccagc c atg gcc   537
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tcc tcc gcc tcc ctg cag cgc ttc ctc ccc ccg tac ccc cac gcg gca     585
Ser Ser Ala Ser Leu Gln Arg Phe Leu Pro Pro Tyr Pro His Ala Ala
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gca tcc cgc tgc cgc cct ccc ggc gtc cgc gcc cgc ccc gtg cag tcg     633
Ala Ser Arg Cys Arg Pro Pro Gly Val Arg Ala Arg Pro Val Gln Ser
      20                  25                  30


tcg acg gtg tcc gca ccg tcc tcc tcg act ccg gcg gcg gac gag gcc     681
Ser Thr Val Ser Ala Pro Ser Ser Ser Thr Pro Ala Ala Asp Glu Ala
35                  40                  45                  50


gtg tcg gcg gag cgg ctg gag ccg cgg gtg gag cag cgg gag ggc cgg     729
Val Ser Ala Glu Arg Leu Glu Pro Arg Val Glu Gln Arg Glu Gly Arg
              55                  60                  65


tac tgg gtg ctc aag gag aag tac cgg acg ggg ctg aac ccg cag gag     777
Tyr Trp Val Leu Lys Glu Lys Tyr Arg Thr Gly Leu Asn Pro Gln Glu
              70                  75                  80


aag gtg aag ctg ggg aag gag ccc atg tca ttg ttc atg gag ggc ggc     825
Lys Val Lys Leu Gly Lys Glu Pro Met Ser Leu Phe Met Glu Gly Gly
              85                  90                  95
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Ile Lys Glu Leu Ala Lys Met Pro Met Glu Glu Ile Glu Ala Asp Lys
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ctc tcc aag gag gac atc gac gtg cgg ctc aag tgg ctc ggc ctc ttc   921
Leu Ser Lys Glu Asp Ile Asp Val Arg Leu Lys Trp Leu Gly Leu Phe
115   120   125   130

cac cgc cgc aag cat cag tat ggg cgg ttc atg atg cgg ctg aag ctg   969
His Arg Arg Lys His Gln Tyr Gly Arg Phe Met Met Arg Leu Lys Leu
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cca aac ggt gtg acg acg agc gag cag acg agg tac ctg gcg agc gtg   1017
Pro Asn Gly Val Thr Thr Ser Glu Gln Thr Arg Tyr Leu Ala Ser Val
          150   155   160

atc gag gcg tac ggc aag gag ggc tgc gcc gac gtg aca acc cgc cag   1065
Ile Glu Ala Tyr Gly Lys Glu Gly Cys Ala Asp Val Thr Thr Arg Gln
    165   170   175

aac tgg cag atc cgc ggc gtc acg ctc ccc gac gtg ccg gcc atc ctc   1113
Asn Trp Gln Ile Arg Gly Val Thr Leu Pro Asp Val Pro Ala Ile Leu
    180   185   190

gac ggg ctc aac gcc gtc ggc ctc acc agc ctc cag agc ggc atg gac   1161
Asp Gly Leu Asn Ala Val Gly Leu Thr Ser Leu Gln Ser Gly Met Asp

195   200   205   210

aac gtc cgc aac ccc gtc ggc aac ccg ctc gcc ggc atc gac ccc gac   1209
Asn Val Arg Asn Pro Val Gly Asn Pro Leu Ala Gly Ile Asp Pro Asp
                215   220   225

gag atc gtc gac acg cga tcc tac acc aac ctc ctc tcc tcc tac atc   1257
Glu Ile Val Asp Thr Arg Ser Tyr Thr Asn Leu Leu Ser Ser Tyr Ile
                230   235   240

acc agc aac ttc cag ggc aac ccc acc atc acc aac ctg ccg agg aag   1305
Thr Ser Asn Phe Gln Gly Asn Pro Thr Ile Thr Asn Leu Pro Arg Lys
                245   250   255

tgg aac gtg tgc gtg atc ggg tcg cac gat ctg tac gag cac ccg cac   1353
Trp Asn Val Cys Val Ile Gly Ser His Asp Leu Tyr Glu His Pro His
                260   265   270

atc aac gac ctc gcg tac atg ccg gcg gtg aag ggc ggc aag ttc ggg   1401
Ile Asn Asp Leu Ala Tyr Met Pro Ala Val Lys Gly Gly Lys Phe Gly
275   280   285   290

ttc aac ctc ctt gtc ggc ggg ttc atc agc ccc aag agg tgg gag gag   1449
Phe Asn Leu Leu Val Gly Gly Phe Ile Ser Pro Lys Arg Trp Glu Glu
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gcg ctg ccg ctg gac gcc tgg gtc ccc ggc gac gac atc atc ccg gtg      1497
Ala Leu Pro Leu Asp Ala Trp Val Pro Gly Asp Asp Ile Ile Pro Val
            310             315             320


tgc aag gcc gtt ctc gag gcg tac cgc gac ctc ggc acc agg ggc aac      1545
Cys Lys Ala Val Leu Glu Ala Tyr Arg Asp Leu Gly Thr Arg Gly Asn
            325             330             335


cgc cag aag acc cgc atg atg tgg ctc atc gac gaa ctt gga atg gag      1593
Arg Gln Lys Thr Arg Met Met Trp Leu Ile Asp Glu Leu Gly Met Glu
        340             345             350


gct ttt cgg tcg gag gtg gag aag agg atg ccg aac ggc gtg ctg gag      1641
Ala Phe Arg Ser Glu Val Glu Lys Arg Met Pro Asn Gly Val Leu Glu
355             360             365             370


cgc gct gcg ccg gac gac ctc atc gac aag aaa tgg cag agg agg gac      1689
Arg Ala Ala Pro Asp Asp Leu Ile Asp Lys Lys Trp Gln Arg Arg Asp
            375             380             385


tac ctc ggc gtg cac ccg cag aag cag gaa ggg atg tcc tac gtc ggc      1737
Tyr Leu Gly Val His Pro Gln Lys Gln Glu Gly Met Ser Tyr Val Gly
            390             395             400


ctg cac gtg ccc gtc ggc cgg gtg cag gcg gcg gac atg ttc gag ctc      1785
Leu His Val Pro Val Gly Arg Val Gln Ala Ala Asp Met Phe Glu Leu
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Ala Arg Leu Ala Asp Glu Tyr Gly Ser Gly Glu Leu Arg Leu Thr Val
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gag cag aac atc gtg atc ccg aac gtc aag aac gag aag gtg gag gcg      1881
Glu Gln Asn Ile Val Ile Pro Asn Val Lys Asn Glu Lys Val Glu Ala
435                    440                    445                    450


ctg ctc gcc gag ccg ctg ctt cag aag ttc tcc ccg cag ccg tcg ctg      1929
Leu Leu Ala Glu Pro Leu Leu Gln Lys Phe Ser Pro Gln Pro Ser Leu
                455                    460                    465


ctg ctc aag ggc ctg gtc gcg tgc acc ggc aac cag ttc tgc ggc cag      1977
Leu Leu Lys Gly Leu Val Ala Cys Thr Gly Asn Gln Phe Cys Gly Gln
                470                    475                    480


gcc atc atc gag acg aag cag cgg gcg ctg ctg gtg acg tcg cag gtg      2025
Ala Ile Ile Glu Thr Lys Gln Arg Ala Leu Leu Val Thr Ser Gln Val
                485                    490                    495


gag aag ctc gtg tcg gtg ccc cgg gcg gtg cgg atg cac tgg acc ggc      2073
Glu Lys Leu Val Ser Val Pro Arg Ala Val Arg Met His Trp Thr Gly
    500                    505                    510
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Cys Pro Asn Ser Cys Gly Gln Val Gln Val Ala Asp Ile Gly Phe Met
515             520             525             530


ggc tgc ctc acc aag gac agc gcc ggc aag atc gtc gag gcg gcc gac      2169
Gly Cys Leu Thr Lys Asp Ser Ala Gly Lys Ile Val Glu Ala Ala Asp
            535             540             545


atc ttc gtc ggc ggc cgc gtc ggc agc gac tcg cac ctc gcc ggc gcg      2217
Ile Phe Val Gly Gly Arg Val Gly Ser Asp Ser His Leu Ala Gly Ala
            550             555             560


tac aag aag tcc gtg ccg tgc gac gag ctg gcg ccg atc gtc gcc gac      2265
Tyr Lys Lys Ser Val Pro Cys Asp Glu Leu Ala Pro Ile Val Ala Asp
            565             570             575


atc ctg gtc gag cgg ttc ggg gcc gtg cgg agg gag agg gag gag gac      2313
Ile Leu Val Glu Arg Phe Gly Ala Val Arg Arg Glu Arg Glu Glu Asp
580             585             590


gag gag tag gagcacagac tggggtggtt tgcttgctcc ggtgatctct             2362
Glu Glu
595


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Glu Ala Val Ser Ala Glu Arg Leu Glu Pro Arg Val Glu Gln Arg Glu
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Gly Arg Tyr Trp Val Leu Lys Glu Lys Tyr Arg Thr Gly Leu Asn Pro
65   70   75   80

Gln Glu Lys Val Lys Leu Gly Lys Glu Pro Met Ser Leu Phe Met Glu
                85   90   95

Gly Gly Ile Lys Glu Leu Ala Lys Met Pro Met Glu Glu Ile Glu Ala
               100   105   110

Asp Lys Leu Ser Lys Glu Asp Ile Asp Val Arg Leu Lys Trp Leu Gly
               115   120   125

Leu Phe His Arg Arg Lys His Gln Tyr Gly Arg Phe Met Met Arg Leu
           130   135   140

Lys Leu Pro Asn Gly Val Thr Thr Ser Glu Gln Thr Arg Tyr Leu Ala
145   150   155   160

Ser Val Ile Glu Ala Tyr Gly Lys Glu Gly Cys Ala Asp Val Thr Thr
               165   170   175

Arg Gln Asn Trp Gln Ile Arg Gly Val Thr Leu Pro Asp Val Pro Ala
               180   185   190

Ile Leu Asp Gly Leu Asn Ala Val Gly Leu Thr Ser Leu Gln Ser Gly
           195   200   205

Met Asp Asn Val Arg Asn Pro Val Gly Asn Pro Leu Ala Gly Ile Asp
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Pro Asp Glu Ile Val Asp Thr Arg Ser Tyr Thr Asn Leu Leu Ser Ser
225   230   235   240

Tyr Ile Thr Ser Asn Phe Gln Gly Asn Pro Thr Ile Thr Asn Leu Pro
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Arg Lys Trp Asn Val Cys Val Ile Gly Ser His Asp Leu Tyr Glu His
                260   265   270

Pro His Ile Asn Asp Leu Ala Tyr Met Pro Ala Val Lys Gly Gly Lys
            275   280   285

Phe Gly Phe Asn Leu Leu Val Gly Gly Phe Ile Ser Pro Lys Arg Trp
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Glu Glu Ala Leu Pro Leu Asp Ala Trp Val Pro Gly Asp Asp Ile Ile
305   310   315   320

Pro Val Cys Lys Ala Val Leu Glu Ala Tyr Arg Asp Leu Gly Thr Arg
            325   330   335

Gly Asn Arg Gln Lys Thr Arg Met Met Trp Leu Ile Asp Glu Leu Gly
            340   345   350

Met Glu Ala Phe Arg Ser Glu Val Glu Lys Arg Met Pro Asn Gly Val

355   360   365

Leu Glu Arg Ala Ala Pro Asp Asp Leu Ile Asp Lys Lys Trp Gln Arg
      370   375   380

Arg Asp Tyr Leu Gly Val His Pro Gln Lys Gln Glu Gly Met Ser Tyr
385   390   395   400

Val Gly Leu His Val Pro Val Gly Arg Val Gln Ala Ala Asp Met Phe
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Glu Leu Ala Arg Leu Ala Asp Glu Tyr Gly Ser Gly Glu Leu Arg Leu
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Thr Val Glu Gln Asn Ile Val Ile Pro Asn Val Lys Asn Glu Lys Val
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Glu Ala Leu Leu Ala Glu Pro Leu Leu Gln Lys Phe Ser Pro Gln Pro
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Ser Leu Leu Leu Lys Gly Leu Val Ala Cys Thr Gly Asn Gln Phe Cys
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Gly Gln Ala Ile Ile Glu Thr Lys Gln Arg Ala Leu Leu Val Thr Ser
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Gln Val Glu Lys Leu Val Ser Val Pro Arg Ala Val Arg Met His Trp
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Thr Gly Cys Pro Asn Ser Cys Gly Gln Val Gln Val Ala Asp Ile Gly
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Phe Met Gly Cys Leu Thr Lys Asp Ser Ala Gly Lys Ile Val Glu Ala
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Ala Asp Ile Phe Val Gly Gly Arg Val Gly Ser Asp Ser His Leu Ala
545   550   555   560

Gly Ala Tyr Lys Lys Ser Val Pro Cys Asp Glu Leu Ala Pro Ile Val
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atg gcc tcc tcc gcc tcc ctg cag cgc ttc ctc ccc ccg tac ccc cac     6048
Met Ala Ser Ser Ala Ser Leu Gln Arg Phe Leu Pro Pro Tyr Pro His
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gcg gca gca tcc cgc tgc cgc cct ccc ggc gtc cgc gcc cgc ccc gtg     6096
Ala Ala Ala Ser Arg Cys Arg Pro Pro Gly Val Arg Ala Arg Pro Val
            20                  25                  30


cag tcg tcg acg gtg tcc gca ccg tcc tcc tcg act ccg gcg gcg gac     6144
Gln Ser Ser Thr Val Ser Ala Pro Ser Ser Ser Thr Pro Ala Ala Asp
        35                  40                  45
```

gag gcc gtg tcg gcg gag cgg ctg gag ccg cgg gtg gag cag cgg gag   6192
Glu Ala Val Ser Ala Glu Arg Leu Glu Pro Arg Val Glu Gln Arg Glu
    50   55   60

ggc cgg tac tgg gtg ctc aag gag aag tac cgg acg ggg ctg aac ccg   6240
Gly Arg Tyr Trp Val Leu Lys Glu Lys Tyr Arg Thr Gly Leu Asn Pro
65   70   75   80

cag gag aag gtg aag ctg ggg aag gag ccc atg tca ttg ttc atg gag   6288
Gln Glu Lys Val Lys Leu Gly Lys Glu Pro Met Ser Leu Phe Met Glu
             85   90   95

ggc ggc atc aag gag ctc gcc aag atg ccc atg gag gag atc gag gcc   6336
Gly Gly Ile Lys Glu Leu Ala Lys Met Pro Met Glu Glu Ile Glu Ala
             100   105   110

gac aag ctc tcc aag gag gac atc gac gtg cgg ctc aag tgg ctc ggc   6384
Asp Lys Leu Ser Lys Glu Asp Ile Asp Val Arg Leu Lys Trp Leu Gly
         115   120   125

ctc ttc cac cgc cgc aag cat cag t gtatgcctct cttctcttgc   6429
Leu Phe His Arg Arg Lys His Gln
         130   135

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atg atg cgg ctg aag ctg cca aac ggt gtg acg acg agc gag cag acg   10313
Met Met Arg Leu Lys Leu Pro Asn Gly Val Thr Thr Ser Glu Gln Thr

                    145   150   155

agg tac ctg gcg agc gtg atc gag gcg tac ggc aag gag ggc tgc gcc   10361
Arg Tyr Leu Ala Ser Val Ile Glu Ala Tyr Gly Lys Glu Gly Cys Ala
              160   165   170

gac gtg aca acc cgc cag aac tgg cag atc cgc ggc gtc acg ctc ccc   10409
Asp Val Thr Thr Arg Gln Asn Trp Gln Ile Arg Gly Val Thr Leu Pro
              175   180   185

gac gtg ccg gcc atc ctc gac ggg ctc aac gcc gtc ggc ctc acc agc   10457
Asp Val Pro Ala Ile Leu Asp Gly Leu Asn Ala Val Gly Leu Thr Ser
              190   195   200

ctc cag agc ggc atg gac aac gtc cgc aac ccc gtc ggc aac ccg ctc   10505
Leu Gln Ser Gly Met Asp Asn Val Arg Asn Pro Val Gly Asn Pro Leu
205   210   215   220

gcc ggc atc gac ccc gac gag atc gtc gac acg cga tcc tac acc aac   10553
Ala Gly Ile Asp Pro Asp Glu Ile Val Asp Thr Arg Ser Tyr Thr Asn
                    225   230   235

ctc ctc tcc tcc tac atc acc agc aac ttc cag ggc aac ccc acc atc   10601
Leu Leu Ser Ser Tyr Ile Thr Ser Asn Phe Gln Gly Asn Pro Thr Ile
              240   245   250

acc aac ct gtgagtgatc gaatcaaatt gatcatgctc tgtgctgtgc   10649
Thr Asn Leu

tgtttcgtgt cgtctctgac gacatgtttg ttgaatttgt tgttgctgcg tgctgttggc   10709

ag g ccg agg aag tgg aac gtg tgc gtg atc ggg tcg cac gat ctg tac·   10757
    Pro Arg Lys Trp Asn Val Cys Val Ile Gly Ser His Asp Leu Tyr
                260   265   270

gag cac cca cac atc aac gac ctc gcg tac atg ccg gcg gtg aag ggc   10805
Glu His Pro His Ile Asn Asp Leu Ala Tyr Met Pro Ala Val Lys Gly
                275   280   285

ggc aag ttc ggg ttc aac ctc ctc gtc ggc ggg ttc ata agc ccc aag   10853
Gly Lys Phe Gly Phe Asn Leu Leu Val Gly Gly Phe Ile Ser Pro Lys
                290   295   300

agg tgg gag gag gcg ctg ccg ctc gac gcc tgg gtc ccc ggc gac gac   10901
Arg Trp Glu Glu Ala Leu Pro Leu Asp Ala Trp Val Pro Gly Asp Asp
                305   310   315

atc atc ccg gtg tgc aag gcc gtt ctc gag gcg tac cgc gac ctc ggc   10949
Ile Ile Pro Val Cys Lys Ala Val Leu Glu Ala Tyr Arg Asp Leu Gly
                320   325   330

acc agg ggc aac cgc cag aag acc cgc atg atg tgg ctc atc gac gaa   10997
Thr Arg Gly Asn Arg Gln Lys Thr Arg Met Met Trp Leu Ile Asp Glu
335   340   345   350

ctt gtgaaccatt tttttctcca ttcatccacg ccattgactg aattacgtat   11050
Leu

gtcccaatgt tcttatcagt taattgcggt gttggcattg cag gga atg gag gct   11105
                                              Gly Met Glu Ala
                                                    355

ttt cgg tcg gag gtg gag aag agg atg ccg aac ggc gtg ctg gag cgc   11153
Phe Arg Ser Glu Val Glu Lys Arg Met Pro Asn Gly Val Leu Glu Arg
            360   365   370

gcg gcg ccg gag gac ctc atc gac aag aaa tgg cag agg agg gac tac   11201
Ala Ala Pro Glu Asp Leu Ile Asp Lys Lys Trp Gln Arg Arg Asp Tyr
            375   380   385

ctc ggc gtg cac ccg cag aag cag gaa ggg atg tcc tac gtc ggc ctg   11249
Leu Gly Val His Pro Gln Lys Gln Glu Gly Met Ser Tyr Val Gly Leu
            390   395   400

cac gtg ccc gtc ggc cgg gtg cag gcg gcg gac atg ttc gag ctc gca   11297
His Val Pro Val Gly Arg Val Gln Ala Ala Asp Met Phe Glu Leu Ala

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                   405                     410                     415


cgc ctc gcc gac gag tac ggc tcc ggc gag ctc cgc ctc acc gtg gag      11345
Arg Leu Ala Asp Glu Tyr Gly Ser Gly Glu Leu Arg Leu Thr Val Glu
420                 425                 430                 435


cag aac atc gtg atc ccg aac gtc aag aac gag aag gtg gag gcg ctg      11393
Gln Asn Ile Val Ile Pro Asn Val Lys Asn Glu Lys Val Glu Ala Leu
                    440                 445                 450


ctc tcc gag ccg ctg ctt cag aag ttc tcc ccg cag ccg tcg ctg ctg      11441
Leu Ser Glu Pro Leu Leu Gln Lys Phe Ser Pro Gln Pro Ser Leu Leu
                    455                 460                 465


ctc aag ggc ctc gtc gcg tgc acc ggc aac cag ttc tgc ggc cag gcc      11489
Leu Lys Gly Leu Val Ala Cys Thr Gly Asn Gln Phe Cys Gly Gln Ala
                470                 475                 480


atc atc gag acg aag cag cgg gcg ctg ctg gtg acg tcg cag gtg gag      11537
Ile Ile Glu Thr Lys Gln Arg Ala Leu Leu Val Thr Ser Gln Val Glu
                485                 490                 495


aag ctc gtg tcg gtg ccc cgg gcg gtg cgg atg cac tgg acc ggc tgc      11585
Lys Leu Val Ser Val Pro Arg Ala Val Arg Met His Trp Thr Gly Cys
500                 505                 510                 515
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ccc aac agc tgc ggc cag gtg cag gtc gcc gac atc ggc ttc atg ggc   11633
Pro Asn Ser Cys Gly Gln Val Gln Val Ala Asp Ile Gly Phe Met Gly
            520   525   530

tgc ctc acc aag gac agc gcc ggc aag atc gtt gag gcg gcc gac atc   11681
Cys Leu Thr Lys Asp Ser Ala Gly Lys Ile Val Glu Ala Ala Asp Ile
            535   540   545

ttc gtc ggc ggc cgc gtc ggc agc gac tcg cac ctc gcc ggc gcg tac   11729
Phe Val Gly Gly Arg Val Gly Ser Asp Ser His Leu Ala Gly Ala Tyr
            550   555   560

aag aag tcc gtg ccg tgc gac gag ctg gcg ccg atc gtc gcc gac atc   11777
Lys Lys Ser Val Pro Cys Asp Glu Leu Ala Pro Ile Val Ala Asp Ile
            565   570   575

ctg gtc gag cgg ttc ggg gcc gtg cgg agg gag agg gag gag gac gag   11825
Leu Val Glu Arg Phe Gly Ala Val Arg Arg Glu Arg Glu Glu Asp Glu
580   585   590   595

gag tag gaacacagac tggggtgttt tgcttgctcc ggtgatctct cgccgtcctt   11881
Glu

gtaaagtaga cgacaatatg ccttcgccca tggcacgctt gtactgtcac gttttggttt   11941

gatcttgtag cccaaaagtt gtgttcattc tcgttacagt cttacagagg atgattgatt   12001

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cgcccccatc cctctcgtct ttcccttgcc ggcagcagag gaggcggcag cgacggcttc   180

agctgctccc acgggccgga tcgggcagtg gcggtggcgt cggcggcttc cgctggcgaa   240

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cccatttgat tttgaattcg ccaagagcca gcaacagcgc ccccgcgccc cctccctcct   420

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caccaccacc accaccacca ccaccaccgt ctccagcc atg gcc tcc tcc gcc tcc   536
                                            Met Ala Ser Ser Ala Ser
                                            1   5

ctg cag cgc ttc ctc ccc ccg tac ccc cac gcg gca gca tcc cgc tgc   584
Leu Gln Arg Phe Leu Pro Pro Tyr Pro His Ala Ala Ala Ser Arg Cys
            10   15   20

cgc cct ccc ggc gtc cgc gcc cgc ccc gtg cag tcg tcg acg gtg tcc   632
Arg Pro Pro Gly Val Arg Ala Arg Pro Val Gln Ser Ser Thr Val Ser
        25   30   35

gca ccg tcc tcc tcg act ccg gcg gcg gac gag gcc gtg tcg gcg gag   680
Ala Pro Ser Ser Ser Thr Pro Ala Ala Asp Glu Ala Val Ser Ala Glu
    40   45   50

cgg ctg gag ccg cgg gtg gag cag cgg gag ggc cgg tac tgg gtg ctc   728
Arg Leu Glu Pro Arg Val Glu Gln Arg Glu Gly Arg Tyr Trp Val Leu
55   60   65   70

aag gag aag tac cgg acg ggg ctg aac ccg cag gag aag gtg aag ctg   776
Lys Glu Lys Tyr Arg Thr Gly Leu Asn Pro Gln Glu Lys Val Lys Leu
                75   80   85

ggg aag gag ccc atg tca ttg ttc atg gag ggc ggc atc aag gag ctc   824
Gly Lys Glu Pro Met Ser Leu Phe Met Glu Gly Gly Ile Lys Glu Leu
                90   95   100

gcc aag atg ccc atg gag gag atc gag gcc gac aag ctc tcc aag gag   872
Ala Lys Met Pro Met Glu Glu Ile Glu Ala Asp Lys Leu Ser Lys Glu
        105   110   115

gac atc gac gtg cgg ctc aag tgg ctc ggc ctc ttc cac cgc cgc aag   920
Asp Ile Asp Val Arg Leu Lys Trp Leu Gly Leu Phe His Arg Arg Lys
        120   125   130

cat cag tat ggg cgg ttc atg atg cgg ctg aag ctg cca aac ggt gtg   968
His Gln Tyr Gly Arg Phe Met Met Arg Leu Lys Leu Pro Asn Gly Val
135   140   145   150

acg acg agc gag cag acg agg tac ctg gcg agc gtg atc gag gcg tac   1016
Thr Thr Ser Glu Gln Thr Arg Tyr Leu Ala Ser Val Ile Glu Ala Tyr

| | | 155 | | | | | 160 | | | | | 165 | | | | | |

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ggc aag gag ggc tgc gcc gac gtg aca acc cgc cag aac tgg cag atc      1064
Gly Lys Glu Gly Cys Ala Asp Val Thr Thr Arg Gln Asn Trp Gln Ile
            170                 175                 180
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cgc ggc gtc acg ctc ccc gac gtg ccg gcc atc ctc gac ggg ctc aac      1112
Arg Gly Val Thr Leu Pro Asp Val Pro Ala Ile Leu Asp Gly Leu Asn
            185                 190                 195
```

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gcc gtc ggc ctc acc agc ctc cag agc ggc atg gac aac gtc cgc aac      1160
Ala Val Gly Leu Thr Ser Leu Gln Ser Gly Met Asp Asn Val Arg Asn
            200                 205                 210
```

```
ccc gtc ggc aac ccg ctc gcc ggc atc gac ccc gac gag atc gtc gac      1208
Pro Val Gly Asn Pro Leu Ala Gly Ile Asp Pro Asp Glu Ile Val Asp
215                 220                 225                 230
```

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acg cga tcc tac acc aac ctc ctc tcc tcc tac atc acc agc aac ttc      1256
Thr Arg Ser Tyr Thr Asn Leu Leu Ser Ser Tyr Ile Thr Ser Asn Phe
                235                 240                 245
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cag ggc aac ccc acc atc acc aac ctg ccg agg aag tgg aac gtg tgc      1304
Gln Gly Asn Pro Thr Ile Thr Asn Leu Pro Arg Lys Trp Asn Val Cys
                250                 255                 260
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gtg atc ggg tcg cac gat ctg tac gag cac cca cac atc aac gac ctc   1352
Val Ile Gly Ser His Asp Leu Tyr Glu His Pro His Ile Asn Asp Leu
       265   270   275

gcg tac atg ccg gcg gtg aag ggc ggc aag ttc ggg ttc aac ctc ctc   1400
Ala Tyr Met Pro Ala Val Lys Gly Gly Lys Phe Gly Phe Asn Leu Leu
       280   285   290

gtc ggc ggg ttc ata agc ccc aag agg tgg gag gag gcg ctg ccg ctc   1448
Val Gly Gly Phe Ile Ser Pro Lys Arg Trp Glu Glu Ala Leu Pro Leu
295   300   305   310

gac gcc tgg gtc ccc ggc gac gac atc atc ccg gtg tgc aag gcc gtt   1496
Asp Ala Trp Val Pro Gly Asp Asp Ile Ile Pro Val Cys Lys Ala Val
            315   320   325

ctc gag gcg tac cgc gac ctc ggc acc agg ggc aac cgc cag aag acc   1544
Leu Glu Ala Tyr Arg Asp Leu Gly Thr Arg Gly Asn Arg Gln Lys Thr
       330   335   340

cgc atg atg tgg ctc atc gac gaa ctt gga atg gag gct ttt cgg tcg   1592
Arg Met Met Trp Leu Ile Asp Glu Leu Gly Met Glu Ala Phe Arg Ser
       345   350   355

gag gtg gag aag agg atg ccg aac ggc gtg ctg gag cgc gcg gcg ccg   1640
Glu Val Glu Lys Arg Met Pro Asn Gly Val Leu Glu Arg Ala Ala Pro

360   365   370

gag gac ctc atc gac aag aaa tgg cag agg agg gac tac ctc ggc gtg   1688
Glu Asp Leu Ile Asp Lys Lys Trp Gln Arg Arg Asp Tyr Leu Gly Val
375   380   385   390

cac ccg cag aag cag gaa ggg atg tcc tac gtc ggc ctg cac gtg ccc   1736
His Pro Gln Lys Gln Glu Gly Met Ser Tyr Val Gly Leu His Val Pro
                    395   400   405

gtc ggc cgg gtg cag gcg gcg gac atg ttc gag ctc gca cgc ctc gcc   1784
Val Gly Arg Val Gln Ala Ala Asp Met Phe Glu Leu Ala Arg Leu Ala
                410   415   420

gac gag tac ggc tcc ggc gag ctc cgc ctc acc gtg gag cag aac atc   1832
Asp Glu Tyr Gly Ser Gly Glu Leu Arg Leu Thr Val Glu Gln Asn Ile
                425   430   435

gtg atc ccg aac gtc aag aac gag aag gtg gag gcg ctg ctc tcc gag   1880
Val Ile Pro Asn Val Lys Asn Glu Lys Val Glu Ala Leu Leu Ser Glu
                440   445   450

ccg ctg ctt cag aag ttc tcc ccg cag ccg tcg ctg ctg ctc aag ggc   1928
Pro Leu Leu Gln Lys Phe Ser Pro Gln Pro Ser Leu Leu Leu Lys Gly
455   460   465   470

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ctc gtc gcg tgc acc ggc aac cag ttc tgc ggc cag gcc atc atc gag     1976
Leu Val Ala Cys Thr Gly Asn Gln Phe Cys Gly Gln Ala Ile Ile Glu
            475                 480                 485


acg aag cag cgg gcg ctg ctg gtg acg tcg cag gtg gag aag ctc gtg     2024
Thr Lys Gln Arg Ala Leu Leu Val Thr Ser Gln Val Glu Lys Leu Val
            490                 495                 500


tcg gtg ccc cgg gcg gtg cgg atg cac tgg acc ggc tgc ccc aac agc     2072
Ser Val Pro Arg Ala Val Arg Met His Trp Thr Gly Cys Pro Asn Ser
            505                 510                 515


tgc ggc cag gtg cag gtc gcc gac atc ggc ttc atg ggc tgc ctc acc     2120
Cys Gly Gln Val Gln Val Ala Asp Ile Gly Phe Met Gly Cys Leu Thr
            520                 525                 530


aag gac agc gcc ggc aag atc gtt gag gcg gcc gac atc ttc gtc ggc     2168
Lys Asp Ser Ala Gly Lys Ile Val Glu Ala Ala Asp Ile Phe Val Gly
535                 540                 545                 550


ggc cgc gtc ggc agc gac tcg cac ctc gcc ggc gcg tac aag aag tcc     2216
Gly Arg Val Gly Ser Asp Ser His Leu Ala Gly Ala Tyr Lys Lys Ser
            555                 560                 565


gtg ccg tgc gac gag ctg gcg ccg atc gtc gcc gac atc ctg gtc gag     2264
Val Pro Cys Asp Glu Leu Ala Pro Ile Val Ala Asp Ile Leu Val Glu
```

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                570                    575                     580

cgg ttc ggg gcc gtg cgg agg gag agg gag gag gac gag gag tag          2309
Arg Phe Gly Ala Val Arg Arg Glu Arg Glu Glu Asp Glu Glu
         585                    590                     595


gaacacagac tggggtgttt tgcttgctcc ggtgatctct cgccgtcctt gtaaagtaga     2369


cgacaatatg ccttcgccca tggcacgctt gtactgtcac gttttggttt gatcttgtag     2429


cccaaaagtt gtgttcattc tcgttacagt cttacagagg atgattgatt gataaataaa     2489


gaagaaacag attctgcaa                                                   2508
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<210> 6

<211> 596

<212> PRT

<213> Oryza sativa

<400> 6

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Met Ala Ser Ser Ala Ser Leu Gln Arg Phe Leu Pro Pro Tyr Pro His
1               5                   10                  15


Ala Ala Ala Ser Arg Cys Arg Pro Pro Gly Val Arg Ala Arg Pro Val
         20                  25                  30
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Gln Ser Ser Thr Val Ser Ala Pro Ser Ser Ser Thr Pro Ala Ala Asp
        35   40   45

Glu Ala Val Ser Ala Glu Arg Leu Glu Pro Arg Val Glu Gln Arg Glu
        50   55   60

Gly Arg Tyr Trp Val Leu Lys Glu Lys Tyr Arg Thr Gly Leu Asn Pro
65   70   75   80

Gln Glu Lys Val Lys Leu Gly Lys Glu Pro Met Ser Leu Phe Met Glu
                85   90   95

Gly Gly Ile Lys Glu Leu Ala Lys Met Pro Met Glu Glu Ile Glu Ala
                100   105   110

Asp Lys Leu Ser Lys Glu Asp Ile Asp Val Arg Leu Lys Trp Leu Gly
        115   120   125

Leu Phe His Arg Arg Lys His Gln Tyr Gly Arg Phe Met Met Arg Leu
        130   135   140

Lys Leu Pro Asn Gly Val Thr Thr Ser Glu Gln Thr Arg Tyr Leu Ala
145   150   155   160

Ser Val Ile Glu Ala Tyr Gly Lys Glu Gly Cys Ala Asp Val Thr Thr

                    165   170   175

Arg Gln Asn Trp Gln Ile Arg Gly Val Thr Leu Pro Asp Val Pro Ala
              180   185   190

Ile Leu Asp Gly Leu Asn Ala Val Gly Leu Thr Ser Leu Gln Ser Gly
              195   200   205

Met Asp Asn Val Arg Asn Pro Val Gly Asn Pro Leu Ala Gly Ile Asp
              210   215   220

Pro Asp Glu Ile Val Asp Thr Arg Ser Tyr Thr Asn Leu Leu Ser Ser
225   230   235   240

Tyr Ile Thr Ser Asn Phe Gln Gly Asn Pro Thr Ile Thr Asn Leu Pro
                    245   250   255

Arg Lys Trp Asn Val Cys Val Ile Gly Ser His Asp Leu Tyr Glu His
              260   265   270

Pro His Ile Asn Asp Leu Ala Tyr Met Pro Ala Val Lys Gly Gly Lys
              275   280   285

Phe Gly Phe Asn Leu Leu Val Gly Gly Phe Ile Ser Pro Lys Arg Trp
              290   295   300

Glu Glu Ala Leu Pro Leu Asp Ala Trp Val Pro Gly Asp Asp Ile Ile
305   310   315   320

Pro Val Cys Lys Ala Val Leu Glu Ala Tyr Arg Asp Leu Gly Thr Arg
            325   330   335

Gly Asn Arg Gln Lys Thr Arg Met Met Trp Leu Ile Asp Glu Leu Gly
                340   345   350

Met Glu Ala Phe Arg Ser Glu Val Glu Lys Arg Met Pro Asn Gly Val
            355   360   365

Leu Glu Arg Ala Ala Pro Glu Asp Leu Ile Asp Lys Lys Trp Gln Arg
        370   375   380

Arg Asp Tyr Leu Gly Val His Pro Gln Lys Gln Glu Gly Met Ser Tyr
385   390   395   400

Val Gly Leu His Val Pro Val Gly Arg Val Gln Ala Ala Asp Met Phe
                405   410   415

Glu Leu Ala Arg Leu Ala Asp Glu Tyr Gly Ser Gly Glu Leu Arg Leu
            420   425   430

Thr Val Glu Gln Asn Ile Val Ile Pro Asn Val Lys Asn Glu Lys Val
        435   440   445

Glu Ala Leu Leu Ser Glu Pro Leu Leu Gln Lys Phe Ser Pro Gln Pro
    450   455   460

Ser Leu Leu Leu Lys Gly Leu Val Ala Cys Thr Gly Asn Gln Phe Cys
465   470   475   480

Gly Gln Ala Ile Ile Glu Thr Lys Gln Arg Ala Leu Leu Val Thr Ser
                485   490   495

Gln Val Glu Lys Leu Val Ser Val Pro Arg Ala Val Arg Met His Trp
                500   505   510

Thr Gly Cys Pro Asn Ser Cys Gly Gln Val Gln Val Ala Asp Ile Gly
        515   520   525

Phe Met Gly Cys Leu Thr Lys Asp Ser Ala Gly Lys Ile Val Glu Ala
    530   535   540

Ala Asp Ile Phe Val Gly Gly Arg Val Gly Ser Asp Ser His Leu Ala
545   550   555   560

Gly Ala Tyr Lys Lys Ser Val Pro Cys Asp Glu Leu Ala Pro Ile Val
                565   570   575

Ala Asp Ile Leu Val Glu Arg Phe Gly Ala Val Arg Arg Glu Arg Glu

                580   585   590

Glu Asp Glu Glu
        595